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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,014	08/01/2003	Yushi Kaneda	NP-0079	4735
30343	7590	03/28/2006	EXAMINER	
NP PHOTONICS, INC. 9030 SOUTH RITA ROAD SUITE 120 TUCSON, AZ 85747			VAN ROY, TOD THOMAS	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 03/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/633,014

Applicant(s)

KANEDA ET AL.

Examiner

Tod T. Van Roy

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 08 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 and 20-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-15 and 23-27 is/are allowed.
- 6) ☒ Claim(s) 20 is/are rejected.
- 7) ☒ Claim(s) 21 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

The examiner acknowledges the amending of claim 23.

### ***Response to Arguments***

Applicant's arguments, see Remarks, filed 02/08/2006, with respect to claims 1-2, 4-11, 16-19, 23-25, and 27 have been fully considered and are persuasive. The rejection of these claims has been withdrawn.

Applicant's arguments, see Remarks, filed 02/08/2006, with respect to the rejection(s) of claim(s) 20-21 under USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bayon et al. (US 5561675) in view of DiGiovanni et al. (US 5237576).

With respect to claim 20, Bayon teaches a fiber (PM, col.2 lines 5-8) laser comprising a resonant cavity including a reflector (fig.1 #R1) having a polarization dependent reflection band, a gain medium (doped fiber, col.4 lines 66-67), a second reflector (fig.1 #R2) having a reflection band that overlaps the polarization dependent band (inherent for the polarization maintained output to occur) so that the cavity has a high Q-factor at the laser wavelength and polarization, a pump source that couples energy into the resonant cavity to pump the gain medium (fig.1 #S), and a modulator (applying traction force or stress, col.4 lines 52-63), that affects the polarization of light oscillating in the resonant cavity to reduce the Q-factor to store energy in the gain medium and then return the Q-factor to its high value to release the energy in a laser pulse (col.4 lines 53-57, before the modulator applies the stress the cavity's gratings are not properly aligned in conjunction with the polarization dependence, leading to a small Q-factor and would lead to a build up in energy in the gain of the cavity, upon proper alignment of the polarization dependent reflection bandwidths the Q-factor would increase and the pulse would be emitted). Bayon does not teach the gratings to be narrow and broadband respectively. DiGiovanni teaches a fiber laser which uses narrow band and broadband gratings. It would have been obvious to one of ordinary skill in the

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art at the time of the invention to combine the fiber laser of Bayon with the gratings of DiGiovanni in order to relax alignment accuracy when forming the gratings (DiGiovanni, col.5-6 lines 63-3).

***Allowable Subject Matter***

Claims 1-15, and 23-27 are allowed.

Claims 21-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The reasons for indication of claims 3, 12-15, 22, and 26 can be found in the office action with paper no. 12042005.

Claims 1, 21, and 23 are believed to be allowable as the prior art was not found to teach a Q-switched laser with the given grating requirements, fiber types, and stress application point, wherein the birefringence induced is used in conjunction with the grating reflection bands to store and release energy in the fiber system. Namely, the gratings formed in the stated fiber type (PM or non-PM) as well as the location of the stress applied by the modulator, was not found to be taught in the prior art or to be an obvious combination of the prior art. The examiner also references the arguments filed by the applicant over the course of this prosecution to further support the differences between the instant invention and the prior art of reference.

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Claims 2-10, and 24-27 are allowable as they depend from allowable claims 1 and 23.

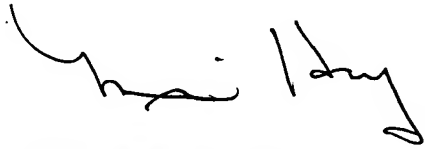
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tod T. Van Roy whose telephone number is (571)272-8447. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on (571)272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TVR

  
MINSUN HARVEY  
PRIMARY EXAMINER